

## COMPRESSION AND COMPRESSED INVERSION OF INTERACTION DATA

### Abstract of the Disclosure

A compression technique compresses interaction data. A fast method processes the  
5 compressed data without the need to first decompress the data. In one embodiment, the  
compression technique is used to compress data in an interaction matrix. The interaction  
matrix (such as a moment method impedance matrix) contains interaction data between  
sources (e.g., basis functions or expansion functions) and testers (e.g., testing functions). The  
sources are collected into groups of sources according to specified criteria. One useful criteria  
10 is based on grouping sources relatively close to one another. For each group of sources, a  
composite source is calculated. The testers are also collected into groups and composite  
testers are calculated. The use of composite sources and composite testers to compute  
couplings when the source and tester are not close to each other allows the interaction matrix  
to be computed as a sparse matrix with a block format.

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